

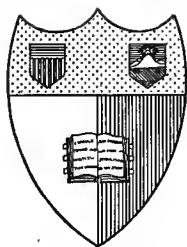
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THESIS

A Method of Making An Arbitrary
Or Better Paying Standard for
A Region and a Comparison of
Seven Farms With That Standard

E. R. Wagner

1915



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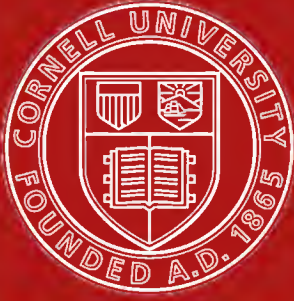
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A METHOD OF MAKING AN
ARBITRARY OR BETTER PAYING STANDARD
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A REGION AND A COMPARISON
OF
SEVEN FARMS WITH THAT STANDARD.

BY

Elton R. Wagner,
1915.



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During the first part of this year I obtained from seven farmers in the township of Lewiston, Niagara County, New York, a record of their farm business. The information secured consisted of an inventory of the farm, stock, tools and supplies at the beginning and end of the year, the acres of each crop and its yield, and an itemized list of all the farm receipts and farm expenses. Records were secured of each farm for the years 1913 and 1914. This was thought necessary in order to get a more average statement of the conditions there, for 1913 was a very good year for the fruit growers of that region. They had very good crops and got good prices, especially for apples which sold from \$3.00 to \$3.50 per barrel. The year 1914, on the other hand, was a poor year, the peach crop was a total failure and apples sold for around \$1.25 per barrel.

The purpose of this paper is, first, to work out a standard for that region, one with which any farmer in that region may compare his own farm and find out for himself the weak points in his business, and, secondly, to make a study and business analysis of these seven fruit farms, comparing them with the standard to bring out their strong and weak points and to see if the weak points can be remedied.

In making comparisons of farms, the factors by which the efficiency of a farm business is measured are not very intelligible unless compared with some standard, and that standard must necessarily be one worked out from a group of farms

which are similar, in type and under the same climatic conditions as the ones with which you wish to compare it.

The data upon which this standard will be based is from records of 87 Niagara County farms, taken this past winter by Mr. G. P. Scoville, "Farm Efficiency Demonstrator", of New York and Mr. Anderson, County Bureau Agent. The records are for the year 1913. While the circular written from a study of these farms is not yet ready for distribution, Mr. Scoville has allowed me to use the tables and data from his work. The 87 farms are in the same county as the seven farms of which I have records and are under practically the same soil and climatic conditions. The results from each are therefore comparable.

Working out a Standard.

One important method of measuring the size of a business is by the amount of money invested in the business. In the following table the farms were sorted according to total capital.

Table I. 87 Niagara County Records Sorted
According to Total Capital -- Showing Effect on
Labor Income.

Sorted by capital	Average capital	Total acres	Acres of orchard bearing age	Labor income	Number of farms	Number farms with Labor Income over \$2000
Under \$9000	\$6757	41	7	\$594	18	2
9001-13000	10862	52	11	691	18	2
13001-19000	16174	73	20	1468	17	4
19001-26000	21704	90	24	1666	17	4
Over \$26000	36613	142	42	1722	17	7
Average	\$18201	73	21	\$1215	87	19

The farms that had less than \$13000 invested ^{averaged} made labor incomes about one-half that of the average farmer. As the capital increases the average labor income increases until the final group, which had an average capital of \$36000 made an average labor income of \$1722 or \$500 above the average. Seven farmers out of 17 made over \$2000. As the capital increases the average size of the farms increase so increase in capital also means larger sized farms. The men in the group with an average investment of \$16000 and an average acreage of 73 acres, twenty of which were in bearing fruit, made \$250 more than the average farmer. The best paying farms had as high as 175 to 180 total acres of which 125 to 130 were in crops and they made \$4000 and \$5000 labor income.

As a better paying standard, then, I would place the

lower limits slightly above where the average men were and the upper limits as high as or a little higher than where the best men were. Thus it would seem best to have a total capital of \$16000 to \$60000, 70 to 200 total acres, 50 to 150 of which were in crops.

Size of business is perhaps better shown on these farms by the amount of Bearing orchard per farm. The following table will show this :

Table II. Table Showing the Effect of Acres of Bearing Fruit on Labor Income.

Acres bearing fruit	Average acres	Labor Income	Number farms	Farms making Labor income over \$2000
Below 5 acres	3.1	\$312	11	1
5+ to 10	7.7	471	20	0
10+ to 20	15.	1172	22	5
20+ to 30	25.5	1513	15	4
Over 30	47.	2335	19	9

With an average of 3.1 acres in Bearing fruit the farmers made an average income of \$312. One man made over \$2000 by selling \$3300 worth of cabbage. As the average acreage in Bearing fruit per farm increases the average labor income increases. With an average of 15 or less acres in Bearing fruit per farm the farmers did not make as much as the average, . and only one out of every 9 made over \$2000. The 15 farms averaging 25 acres in Bearing fruit per farm made \$300 more than the average and one out of every four made over \$2000

labor income. The ones who averaged 47 acres Bearing fruit per farm, over twice as much as the average, made \$2335, or nearly twice as much as the average farmer. It certainly paid to have a large acreage of fruit in 1913 in that region. With 25 acres of Bearing fruit the chances of making a good labor income were good. The best man had 123 acres in Bearing fruit and made over \$5000. Between these limits, that is Bearing fruit 25 to 125 acres, one ought to succeed.

Another measure of size is the amount of productive labor spent, both man and horse, during the year. It serves also as an indication of the labor efficiency on the farm.

By using the acreage of bearing fruit set by the standard, together with the area in other crops, multiplying these by the work units¹ for these crops², it works out that one

¹ A productive work unit is the time spent in harvesting 1 acre of hay, cut once, or an equivalent of that time. Under average circumstances, it is equivalent to about 1 ten hour day.

² The productive man and horse work units used in this paper for working out the seven farms are ones worked out by the Farm Management Dept. of N. Y. State College of Agriculture for the Various enterprises. They are as follows :

Man	Horse	Enterprise
<u>work units</u>	<u>work units</u>	
5	5	Corn for grain.
10	10	Potatoes.
5	5	Field beans.
2	3	Small grains.
1	1	Hay per cutting.
15	5	Apples bearing when yield is over 25 bbl.
3 - 10	1 - 5	Apples bearing when yield is less 25 bbl.
15	5	Other bearing tree fruits.
1 - 5	1 - 3	Orchards not bearing.
15	2	Cows, ordinary dairy.
2	.1	Heifers, calves, bulls, colts.
.5	.05	Sheep.
3	.5	Brood sows with pigs until weaned.
.5	.1	Other pigs.
15	2	Hens per 100.
1	2	Man and team for every \$4 receipts.
1	0	Man for every \$2 receipts.

ought to have from 600 to 1500 productive man work units and 350 to 700 productive horse work units.

Another factor that is of great importance to successful farming in the fruit region is that of fruit yields or production. In the following table the 87 farms were sorted by fruit yields.

Table III. The Effect of Peach, Apple and Pear Yields on Profits. Average Yields Represented by 100 Per Cent.¹ 87 Niagara County farms, 1913.

Sorted by Peach, Apple, & Pear Yields	Per cent average yield	Labor Income	Number Farms	Number farms labor income over \$2000	Acres bearing orchard
Below 60%	35%	\$122	18	0	11
60 - 90	79	1164	21	3	25
91 - 110	93	1381	15	4	30
111 - 130	117	1689	16	6	19
Over 130%	164	1829	17	6	17

In the above table the farmers who had yields less than 60 per cent averaged only \$122. As the yields increased the average income per farm increased. The farms which had 79 per cent average yields made less than the average farmer, even though they have on an average 4 acres more of bearing orchard. When the per cent average yield increased to 93

¹ Average yields.

Apples -- 56 bbls. per acre.

Peaches -- 284-1/3 bushels' baskets per acre.

Pears -- 6800# per acre.

per cent the 15 farms made 1381 or \$200 more than the average farmer, but they also had an average of 9 more acres of bearing fruit per farm. As the per cent average yield goes up to 117 and 164, one man out of three made over \$2000 in spite of the fact that they had two and three acres less of bearing fruit per farm than the average farm. It certainly does pay to get larger production. With a per cent average yield or fruit index of 120 one stands a good chance of making a good labor income if he has average size of business. The better farms had a fruit index of over 200 and they made much better profits.

It certainly would pay to try and raise one's production up to 120. Of course, 200 would be much better. This would mean apples 70 to 150 barrels per acre,

peaches 300 to 500 . one-third bushels per acre,

pears 8000 to 15000 pounds per acre.

In order to see the effect of orchard specialization the farms were sorted by percentage of total receipts from Orchard fruits. The results are given in Table IV.

Table IV. Sorted According to Percentage of Total
Receipts from Orchard Fruits.

Per cent of total receipts from Orch- ard fruits	Total receipts	Orchard receipts	Acres of Orchard bearing age	Number farms	Farms with Labor Income over \$2000	Labor Income
90% and over	\$6828	\$6576	39	24	11	\$2299
70 - 89	3792	2950	20	27	5	1106
40 - 69	2712	1623	11	19	2	776
Less than 40%	1635	400	6	17	1	358

This table would at first glance appear to prove conclusively that for the best success one should specialize in fruit. The farmers who had over 90 per cent of total receipts from orchard fruit made over twice as much on an average as those who had from 70 to 89. But was it because they had 90 per cent of their receipts from fruit or because they had on an average 18 acres more of bearing fruit per farm than the average, that they made \$2299, and therefore merely size of business ? The 19 farms which had only 40 to 69 per cent of total receipts from Orchard fruits averaged less than one-third the area in bearing fruit that the 90 per cent group had, yet they made over one-third as much. Even the group with less than 40 per cent of total receipts from Orchard fruits with an area one-sixth as large as the 90 per cent group made one-sixth as much. Instead of showing specialization of fruit does not the table show the size of business with the table upside down ? Whether or not it would pay a man to have a large area in fruit and also a

large area in other crops the table does not show. Whether or not diversity among the fruits themselves pays better than specialization in one kind of fruit is a question that would need to be studied over several years to decide. There is not sufficient data to decide upon a standard for diversity. In 1913 the farmers derived their main income from two important products, peaches and apples.

Labor Income as means of comparing farms is quite important. Out of the 87 farmers, 19, or less than one in every 5 made labor incomes over \$2000. One man made a labor income of over \$5000. With a good sized, well organized farm in this region one ought to make \$2000, some may make more, the ones making \$5000 will be the exception, however.

We now have a standard that may be used with which the seven farms may be compared. This standard is

Labor Income	\$2000+
Size of Business	
Capital	\$16000-\$60000
Total Acres	75-200
Crop Acres	50-175
Acres in Bearing fruit	25-125
Man work units	600-1500
Horse work units	350-700
Production	
Barrels of apples per acre	70-150
One-third bushels of peaches per acre	300-500
Pounds pears per acre	8000-15000
Crop Index	120-200

It might be well before discussing each farm to describe some of the general conditions of the region.

The farms are in the township of Lewiston, Niagara County, New York. Their position is shown by white dots on the map on the following page.

The marketing facilities of the region are very good. There is a shipping station within two miles of the farthest farm, and a trolley line, with a switch, goes through two of the farms. Five of the seven farms are situated upon macadam or brick roads. The other two are with two miles of the good roads. Two cold storage plants, one a chemical storage, the other an ice storage within four miles of the farms make it possible for the farmers, who are not ready to sell at picking time, to store their fruit.

A good deal of the early fruit is drawn to Niagara Falls or shipped to commission men in Buffalo. The later fruit is usually sold to local buyers or to men, who come in year after year from outside. There are usually buyers from Chicago, New York and Philadelphia every year. All these conditions tend to bring about competition and usually bring good prices to the farmers.

The climate is ideal to the development of the fruit industry. According to weather reports, Lake Ontario has an ameliorating effect upon the temperature, which seems to bring about a more gradual change from summer to winter which insures a more perfect maturity of fruit, twig and bud. The mean annual temperature is about 47.5 degrees. There is a

growing season of 170 days. The elevation is about 640 feet above sea level. Soil type according to soil maps is mostly of the Dunkirk and Clyde series. The annual precipitation is about 32 inches, one-half of which falls during the growing season, May to September.

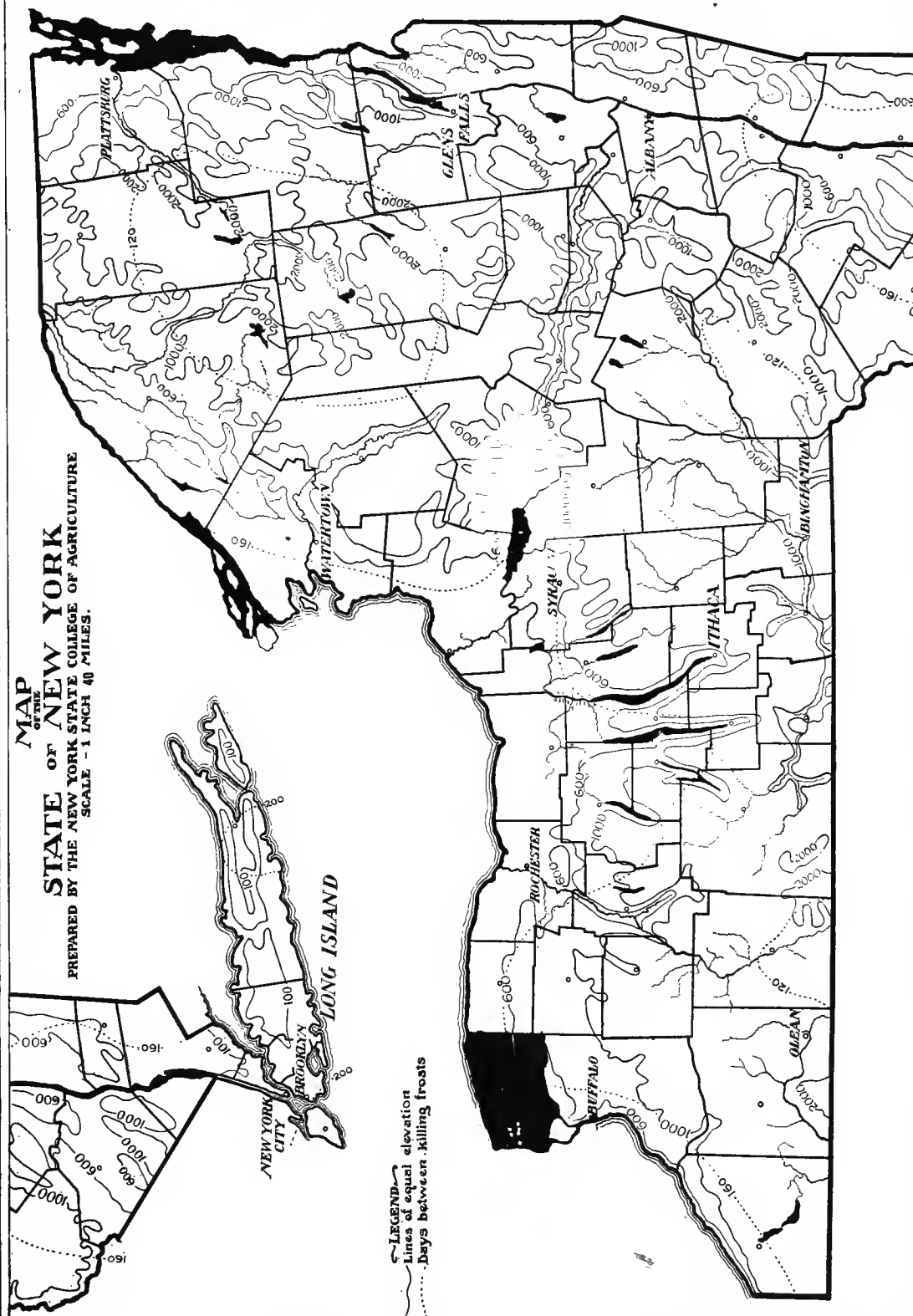
The farmers in this region depend very largely upon men who travel the roads for their help during fruit harvest. Many of these men come out from the cities for a month or two at that season of the year. Others seem to follow fruit harvest up from the south, starting in Florida and working north as the fruit ripens. Many of these men return year after year. There seems to be no trouble in getting all the help needed, although some of it is not very good.

Land values range from \$75 per acre up. Good fruit land sells for \$200 and \$300 per acre.

Comparison of Seven Farms with the Standard.

In the following pages each farm is taken up separately, compared with the standard and its strong and weak points noted. Suggestions for improvements are given.

MAP
OF THE
STATE OF NEW YORK
PREPARED BY THE NEW YORK STATE COLLEGE OF AGRICULTURE
SCALE - 1 INCH 40 MILES.



FARM I.

Efficiency Factors.

	<u>1913</u>	<u>1914</u>	<u>Better Paying Standards</u>
Labor Income	\$2541	\$1373	\$2000+
Size of Business			
1. Total capital	\$25570	\$26104	\$16000 - \$60000
2. Total Area	239	239	75 - 200
3. Crop Acres	168	166	50 - 175
4. Acres in Bearing orchard	29	29	25 - 125
5. Acres in non-bearing orchard	12	18	-----
6. Man work units	958	931	600 - 1500
7. Horse work units	605	605	350 - 700
8. Man equivalent	4	4.5	-----
Production			
1. Barrels of apples per acre	51	70	70 - 150
2. One-third bushels peaches per acre	169	---	300 - 500
3. Pounds pears per acre	9760	4400	800 - 15000
4. Fruit Index	98	97	120 - 200
Diversity			
1. Per cent total receipts from orchard fruits	57.4	38	-----
2. \$500 products			-----
Apples	\$2445	Apples \$1607	
Pears	610	Beans 594	
Plums	613	Wheat 1056	
		Hay 602	

The Farm.

The farm is located within two miles of a shipping station, and 10 miles of Niagara Falls, a city of 35,000 population. It is about one and one-half miles from the farm to a good macadam road to the east and 2 miles to a brick boulevard to the west. The soil is of Dunkirk loam and Clyde loam type. The farm lays pretty flat and is somewhat in need of drainage. The soil is in good fertility. The operator was born and has lived on the farm of 196 acres his entire life, 56 years. The last few years he has cut hay on shares on a farm of 43 acres, 33 of which are in woods.

Profits.

The first year's record shows a labor income of \$2540 which comes well within the standard. In 1914, a very bad year for all the farmers of that region, he made \$1373 which was due largely to his crop sales aside from fruit.

Size.

The profits were made the first year from 168 acres of crops and in 1914 from 166. This is the largest farm of the seven. In capital, total acres and crop acres it comes within the standard, also in acres of bearing fruit. Man and horse work units are good. It is a four-man business.

Production.

In production this man was below average as shown by fruit index, pears being the only crop to go over 100 per cent in 1913 and apples in 1914. He, however, had a large business and so made a good labor income in spite of poor production in fruit.

Diversity.

This man's income was pretty evenly distributed between fruit and other crops, 57.4 per cent of his total receipts coming from orchard fruit in 1913 and 38 per cent in 1914. He had three products over \$500 in 1913 and four in 1914.

Summary.

The relation between fruit and other crops that this man had, while it may have been a weakness in 1913, certainly proved a strong point in 1914, when the apple crop sold for only \$1.25 per barrel. This farmer purchased 9 head of young stock in 1913. He has kept them a year and a half for an increase of about \$20 per head. He said he realizes that their feed and pasture have cost him more than the increase. He expects to get rid of them as soon as possible. As he wants the manure and also wants to feed up his roughage, it might pay him to winter and fat steers or sheep.

FARM II.

Efficiency Factors.

	<u>1913</u>	<u>1914</u>	<u>Better Paying Standards</u>
Labor Income	\$3161	-\$ 522	\$2000+
Size of Business			
1. Total Capital	\$22415	\$22505	\$16000 - \$60000
2. Total Area	125	125	75 - 200
3. Crop Acres	103	103	50 - 175
4. Acres in Bearing orchard	41	45	25 - 125
5. Acres in non- bearing orchard	14	10	-----
6. Man work units	853	634.5	600 - 1500
7. Horse work units	385.2	356.5	350 - 700
8. Man equivalent	3	2.2	-----
Production			
1. Barrels of apples per acre	---	---	70 - 150
2. One-third bushels peaches per acre	510	---	300 - 500
3. Pounds pears per acre	18703	11150	800 - 15000
4. Fruit Index	189	13	120 - 200
Diversity			
1. Per cent total re- ceipts from orchard fruits	90	57.4	-----
2. \$500 Products Peaches	\$5153 684		-----

The Farm.

The farm is in two parts, 100 acres where the buildings are and 25 acres 2 miles away. This man did not have enough land to raise his grains so he purchased the 25 acres three years ago. All the fruit and woods are on the home place. He works the 25 acres, goes back and forth and brings all the grain and hay home. The farm is valued at \$125 per acre. He is within one-fourth mile from a brick boulevard and only one-fourth mile from a switch on a trolley line.

Profits.

In 1913 he had a big peach crop and sold them for a dollar a bushel and thus he was able to make \$3161. He could have made more for he left tons and tons of plums on the trees, not because he could not get help, but because they were cheap, only 50 cents per bushel. He was making lots of money from his peaches just then so he said "let them go", and he did, only picking \$200 worth. In 1914 a total peach failure caused him a loss of \$522.

Size.

He had a crop area of 103 acres, 41 of which were bearing fruit in 1913 and 45 in 1914. Thirty acres of this fruit are in peaches. This comes within the standard. He is only fair in his total productive work units.

Production.

A big peach crop, 500 baskets per acre in 1913 together with a good pear yield made it a good year, but in 1914 when the peach crop failed, the fruit index dropped from

189 per cent to 13 per cent and the labor income dropped from \$3161 to -\$522.

Diversity.

With 90 per cent of his receipts from orchard in 1913 he made \$3161 even though it all came from one or two products. When his main crop failed him, he had only one other crop to fall back upon and that fell below the \$500 mark. There is not so much risk when one has three or four products from which to derive his income.

Summary.

Due to a large acreage of peaches and a large production in 1913, he made \$3161, but when that crop failed him in 1914 he failed to make a labor income. He has a good sized business. Working a farm two miles from home is quite a disadvantage, much time being wasted in going back and forth, but he was unable to get land any nearer.

FARM III.

Efficiency Factors.

	<u>1913</u>	<u>1914</u>	<u>Better Paying Standards</u>
Labor Income	\$6185	\$1196	\$2000+
Size of Business			
1. Total capital	\$22590	\$22630	\$16000 - \$60000
2. Total Area	95	95	75 - 200
3. Crop Acres	82	82	50 - 175
4. Acres in Bearing orchard	41	41	25 - 125
5. Acres in non-bearing orchard	14	14	-----
6. Man work units	915.5	872.5	600 - 1500
7. Horse work units	316.3	313	350 - 700
8. Man equivalent	6	6.25	-----
Production			
1. Barrels of apples per acre	95	135	70 - 150
2. One-third bushels peaches per acre	582	0	300 - 500
3. Pounds peaches per acre	15875	12250	800 - 15000
4. Fruit Index	190	174	120 - 200
Diversity			
1. Per cent total receipts from orchard fruits	94	97	-----
2 \$500 products			-----
Apples	\$6900	Apples	\$4070
Pears	1444	Pears	759
Plums	1185	Plums	1125
Prunes	664	Prunes	1050
Total	1209		

The Farm.

Farm III is one of the smallest and yet the most profitable of the seven farms. It is a farm of 95 acres worth \$200 per acre. He has fine buildings upon the place, total value of buildings is \$8000. It is practically level land for the most Dunkirk loam, however, some Clyde fine sandy loam. It is very fertile as the crops show. The present owner purchased the place in 1890 for \$9000. The land borders Niagara River and so offers fine facilities for drainage. There is a trolley line, with a switch, which runs through the place. The place is also on a brick boulevard and one and one-fourth miles from New York Central Railroad.

Profits.

The labor income made by this farmer was the highest, both for the year 1913 and for the average of the two years. In 1913 it was \$6185 and in 1914, \$1196.

Size.

The farm comes well within the standard for both years in all respects as far as size goes. It is not as large as several of the other farms, however. He has 6 men and 8 horses on his small place yet he does better than any one else.

Production.

While he has fairly good size as compared to the standard, it is really his production and the price he gets that make for him such success. In 1913 he produced, lacking 10 per cent, twice as much per acre as the average and one and

three-fourths times as much in 1914. Upon a 20 acre apple orchard he produced 95 barrels per acre in 1913 and 135 in 1914 as compared to 56, the average for the region. Peaches also averaged twice as much as the average in 1913.

Diversity.

This farmer received 94 and 97 per cent of his total receipts from fruit in the years 1913 and 1914 respectively, and these returns did not come from one kind of fruit, but from four or five, varying in amount from \$664 to \$6900. The great variation in the two years is due to the fact, as I stated before, that the peach crop was a total failure in 1914 and the price of apples was just about the cost of production.

Prices.

There is another factor that is of great importance to the fruit grower and that is prices. It was partly due to poor prices of apples in 1914 that made some of these farms failing propositions. It is due to some extent to prices that this farmer has been able to make such good profits. He has for years dealt in fruit, principally apples, as a buyer and due to this fact commands a better price for his products. For example, the price that most of the farmers received for apples in 1913 was \$3.00 per barrel. This man sold for \$3.50 which meant \$950 on his 1900 barrels. The same thing happened this past year. He sold for \$1.40 to \$1.50 while other farmers sold for \$1.25 to \$1.35.

Summary.

A good sized farm, 41 acres of which are in bearing

orchard, excellent yields and the ability to sell that fruit, especially apples from 25 to 50 cents more a barrel than the average farmer, made for this farmer a labor income of \$6185 in 1913 and \$1196 in 1914. Nine horses and 6 men seem rather high for a place of 95 acres. By studying labor efficiency this might be reduced.

FARM IV.

Efficiency Factors.

	<u>1913</u>	<u>1914</u>	<u>Better Paying Standards</u>
Labor Income	\$76	\$110	\$2000+
Size of Business			
1. Total capital	\$13470	\$14007	\$16000 - \$60000
2. Total Area	97	97	75 - 200
3. Crop Acres	90	87	50 - 175
4. Acres in Bearing orchard	21	21	25 - 125
5. Acres in non-bearing orchard	31	35	-----
6. Man work units	692	705.5	600 - 1500
7. Horse work units	357.5	359.6	350 - 700
8. Man equivalent	3.25	3.4	-----
Production			
1. Barrels of apples per acre	28	33	70 - 150
2. One-third bushels peaches per acre	0	0	300 - 500
3. Pounds pears per acre	9881	6606	800 - 15000
4. Fruit Index	119	87	120 - 200
Diversity			
1. Per cent total receipts from orchard fruits	77	71	-----
2. \$500 products			-----
	Pears \$1384	Pears \$1057	

The Farm.

This farm I brought in just to show a way of getting started in the fruit industry in that region. These two brothers bought the farm in 1909; one was a lawyer who had had one year of practical farming experience and two 12 weeks' winter courses at New York State College of Agriculture; the other was a civil engineer with very little farm experience. They had a little money so purchased the farm for \$12125, giving a mortgage for \$6000 at 5 per cent. There were about 15 acres of bearing orchard on the farm at that time. The farm is 97 acres in area, is alongside of Farm III on a brick boulevard and has a trolley line running through the place. They began at once to set out fruit and have continued until at the present time they have 35 acres in young orchard, some of which should bear this next year. All this time they have just about made expenses. They sold some fruit from the bearing orchard, some cash crops, kept a couple hundred hens and sold eggs.

Their man and horse work units are somewhat low, and while the fruit index is 119 per cent in 1913, it is figured entirely from 8 acres of pears and 3 of apples. The receipts from fruit are 71 and 77 per cent, because the small amount of fruit, which was principally pears, was all they had to sell.

Labor income is low as one would expect it to be on a system of this kind. In order to be fair, one should perhaps increase the real estate valuation of the property, but

just how much it has increased due to the setting out and growing of trees is a question, so in this paper the valuation has been kept the same for both years.

These two brothers will have a business in a few years that will no doubt pay them well for the time they have waited.

They are setting out several kinds of fruit. They should, however, strive to increase the efficiency of their labor.

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FARM V.

Efficiency Factors.

	<u>1913</u>	<u>1914</u>	<u>Better Paying Standards</u>
Labor Income	\$1145	-\$305	\$2000+
Size of Business			
1. Total capital	\$20978	\$21164	\$16000 - \$60000
2. Total Area	93.5	91.5	75 - 200
3. Crop Acres	64.5	61	50 - 175
4. Acres in Bearing orchard	22.5	22.75	25 - 125
5. Acres in non-bearing orchard	6	6	-----
6. Man work units	599.5	706.2	600 - 1500
7. Horse work units	355.7	383.6	350 - 700
8. Man equivalent	4	4.3	-----
Production			
1. Barrels of apples per acre	0	122	70 - 150
2. One-third bushels peaches per acre	366	141	300 - 500
3. Pounds pears per acre	18370	2300	800 - 15000
4. Fruit Index	142	92	120 - 200
Diversity			
1. Per cent total re- ceipts from or- chard fruits	71	64	-----
2. \$500 products			-----
Pears	\$1608	Apples \$ 757	

The Farm.

The farm is situated on a macadam road one-half mile from the village of Lewiston. There is an area of 91.5 acres, 8 acres of which are in the village one-half mile from the buildings. The soil, a Dunkirk clay and Dunkirk loam, is well drained. It is valued at \$181 per acre. The value of buildings is \$8300.

Profits.

The farm made \$1145 in 1913 and a minus \$305 in 1914 which is much below the standard.

Size.

Crop acres come within the standard, but acres of bearing orchard is low. The productive man and horse work units are also rather low.

Production.

His production was good in 1913 as shown by crop index, . . , but it all came from only 10 acres of fruit. The yield of pears was exceptionally high, being above the upper limit set by the standard. The production was only 92 per cent average in 1914. Although he got 122 barrels of apples per acre, it only came from 4 acres, however.

Diversity.

Receipts from orchard fruits were 71 and 64. There was only one product over \$500, pears \$1608 in 1913 and apples \$757 in 1914. While he had other fruit he did not have enough of any one kind to include it in the \$500 products.

Summary.

On the whole the business was rather small, 61 and 64 crop acres, 22.75 of which were in bearing orchard. Production was good in 1913, but it came from only a small acreage. Diversity included only one \$500 product.

This farmer, however, is keeping a better grade of cows and makes quite a little from butter; he is also going into breeding of pure-bred hogs to some extent and thus increasing the size of his business. It would probably pay him to set out more fruit as the ones who have more than he make more.

FARM VI.

Efficiency Factors.

	<u>1913</u>	<u>1914</u>	<u>Better Paying Standards</u>
Labor Income	\$4898	-\$666	\$2000+
Size of Business			
1. Total capital	\$29656	\$29670	\$16000 - \$60000
2. Total Area	144	144	75 - 200
3. Crop Acres	127	129	50 - 175
4. Acres in Bearing fruit	54	54	25 - 125
5. Acres in non-bearing fruit	23	23	-----
6. Man work units	1028.5	944.8	600 - 1500
7. Horse work units	456.4	437.5	350 - 700
8. Man equivalent	4.0	3.1	-----
Production			
1. Barrels of apples per acre	60	36	70 - 150
2. One-third bushels peaches per acre	562	75	300 - 500
3. Pounds pears per acre	10000	1667	800 - 15000
4. Fruit Index	135	44	120 - 200
Diversity			
1. Per cent total receipts from orchard fruits	89	72	-----
2. \$500 products			-----
Apples	\$4700	Apples \$1211	
Pears	2250	Pears 500	
Peaches	1125		

The Farm.

This farm of 144 acres is one and one-half miles east of Farm V on the same macadam road. The land is very fertile.

The soil type is of Dunkirk loam and Clyde loam. The land is a little wet and needs drainage especially the northern part of the farm. The farmer purchased this farm 5 years ago. Before that time the apple orchard was not taken care of. He began at once to renovate it and at the present time it is his main source of income.

Profits.

This farmer did well in 1913. He made a labor income of \$4898. In 1914, however, no peaches, low price of apples caused him to make a minus \$666 labor income.

Size.

The farm is of good size 127 and 129 acres in crops, 54 of which are in bearing orchard. This will be increased as 23 acres are in young fruit. Productive man and horse work units show up well as compared to the standard.

Production.

Production is fairly good, it being 135 per cent in 1913. Apples, pears and peaches all were above average and all except apples come within the standard. Production in all fruits were low in 1914. The fruit index was only 44 per cent.

Diversity.

The receipts from fruit were 89 per cent of the total receipts in 1913 and 72 per cent in 1914. In 1913 there

were three products over \$1000 and two over \$500 in 1914.

Summary.

The good points about this farm is the good size of business and good production in 1913. The weak points are the peach failure in 1914 and low price of apples. Productive man and horse work units are good both years.

FARM VII.

Efficiency Factors.

	<u>1913</u>	<u>1914</u>	<u>Better Paying Standards</u>
Labor Income	\$3721	\$1246	\$2000+
Size of Business			
1. Total capital	\$35924	\$36079	\$16000 - \$60000
2. Total Area	160	200	75 - 200
3. Crop Acres	150	167	50 - 175
4. Acres in Bearing orchard	68	89	25 - 125
5. Acres in non-bearing orchard	60	60	-----
6. Man work units	1537.3	1654.8	600 - 1500
7. Horse work units	645	687.1	350 - 700
8. Man equivalent	8.8	5.5	-----
Production			
1. Barrels of apples per acre	---	69	70 - 150
2. One-third bushels peaches per acre	420	47	300 - 500
3. Pounds pears per acre	3714	1700	800 - 15000
4. Fruit Index	144	51	120 - 200
Diversity			
1. Per cent total receipts from orchard fruits	90	88	-----
2. \$500 products			-----
Plums	\$750	Grapes	\$1680
Grapes	1200	Peaches	1900
Peaches	6040	Prunes	1200
Prunes	1170	Apples	1918

The Operator.

The operator attended the Winter course in New York State College of Agriculture three years, managed a farm for one year, then moved on his father's farm of 100 acres and worked it on shares. The next year he purchased a farm of 60 acres. He commenced at once to set out trees on his own place. This was four years ago. He now has the 60 acres all out to apples, with pears, plums and prunes as fillers.

The Farm.

The landlord's farm of 100 acres is situated on a macadam road one and one-half miles from a shipping station. It is mostly Clyde loam soil and is nearly all in fruit. Due to its being mostly all in fruit, the feed, grain, etc., are raised in the young orchard on the operator's farm. The landlord is supposed to furnish one-half the feed and so to simplify matters at the time of settling he pays the operator \$4 per acre for the feed raised on the operator's farm. The feed is then fed undivided. This accounts for the cash receipt for rent to the operator and the rent paid out by the landlord in the record blank.

The operator's farm is on a good road one and one-half miles from the railroad. The soil is Clyde loam and is well drained. He has to go one and one-half miles to work this place.

In 1914 the operator cash rented 40 acres of land, 20 of which were in apples, for \$200. His uncle helped him work this strip, for which \$400 is allowed in the record.

Profits.

In 1913 the operator made \$1251 labor income, the farm \$3721 and the landlord made 17 per cent on a \$20,000 investment. In 1914 the operator made \$596, the farm \$1246 and the landlord 7 per cent on his investment. In order to have it comparable with the other records, I have used the farm labor income in this paper.

Size.

While this is not the largest farm in total acres, it is the largest in all other respects, 150 and 167 crop acres, 68 in 1913 bearing orchard and 89 in 1914, also 60 acres in non-bearing. Man and horse work units are at the upper limit set by the standard. It is a big business.

Production.

In 1913 production was good, coming, however, almost entirely from peaches which produced 420 baskets per acre. In 1914, due to peaches, the fruit index was only 51 per cent.

Diversity.

In 1913, 90 per cent of the receipts were from orchard fruits and 88 per cent in 1914. There were four products each year yielding over \$1000.

Summary.

This farmer has an extra large business, and it will increase yearly as the young fruit comes into bearing. Large size and good production realized for him a labor income of \$3721 in 1913. In 1914 in spite of poor production he made \$1246. Having three places all separated is a disadvantage and makes it difficult to use labor efficiently.

A summary of these seven farms show that the average labor income in 1913 was \$3104. In 1914 the average labor income was \$347, three out of the seven made a minus labor income, their expenses being greater than their receipts. An average of the two years show that these seven farms made on an average \$1726 per farm. Whether or not this great variation occurs year after year would require records for several consecutive years to determine. The farmers, however, say that a total peach failure like last year, and which was a big factor in their low labor incomes, does not come more than once in 10 or 15 years.

The writer has attempted in this paper to point out and work out some of the important factors in successful farming in the fruit region of Niagara County and further to show how these factors may be used, by using them as a basis of a discussion of seven farms.

